

Notice of Allowability	Application No.	Applicant(s)	
	10/826,411	MAEDA, TSUYOSHI	
	Examiner	Art Unit	
	Thoi V. Duong	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed 12/06/2006.
2. ☒ The allowed claim(s) ~~is~~ are 1, 4, 5, 7, 8 and 10-13.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date <u>10/05/06</u> | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

DETAILED ACTION

1. This office action is in response to the Amendment filed December 06, 2006.

Accordingly, claims 2, 3 and 6 were cancelled, and new claims 8-13 were added.

Currently, claims 1, 4, 5 and 7-13 are pending in this application.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Jonathan H. Backenstose (Reg. No. 47,399) on March 01, 2007.

In the claims:

Claim 9: cancel

Allowable Subject Matter

3. Claims 1, 4, 5, 7, 8 and 10-13 are allowed.

The following is an examiner's statement of reasons for allowance: none of the prior art of record fairly suggests or shows all of the limitations as claimed. Specifically,

Re claims 1 and 10, none of the prior art of record discloses, in combination with other limitations as claimed, a transfective liquid crystal display comprising:

an adjusting layer provided at least in the reflective display area, the adjusting layer making a thickness of the liquid crystal layer thicker in the transmissive display

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area than in the reflective display area, the adjusting layer including a slope in a vicinity of a boundary between the transmissive display area and the reflective display area;

a reflective layer provided in the reflective display area of the opposite substrate and in a non-overlapping condition with the transmissive display area in plan view, the reflective layer having a portion extending directly below the switching element, beneath the slope of the adjusting layer, and to an edge of the slope of the adjusting layer that borders the transmissive display area, the portion shielding the alignment disorder of the liquid crystal layer from being viewed during transmissive display; and

at least one of a slit, opening, and ridge that control the direction in which the liquid crystal molecules of the liquid crystal layer tilt, the at least one of a slit, opening, and ridge being provided in overlap in plan view with both the slope of the adjusting layer and the edge of the reflective layer.

The most relevant references, US 2003/0038904 A1 to Kaneko et al. (Kaneko) and US 6,788,375 B2 to Ogishima et al. (Ogishima); and US 6,956,632 B2 to Ozawa et al. (Ozawa) fail to disclose or suggest the claimed invention.

At first, Kaneko in view of Ogishima fail to disclose or suggest the reflective layer having a portion extending directly below the switching element, beneath the slope of the adjusting layer, and to an edge of the slope of the adjusting layer that borders the transmissive display area for shielding the alignment disorder of the liquid crystal layer from being viewed during transmissive display.

As shown in Figs. 1, 2 and 4, Kaneko discloses a transfective film 11 comprising a reflective layer having a light-shielding portion 11a installed in the periphery region W

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which is outside of the display region V (paragraph 86); however, Kaneko does not disclose the reflective layer that extends beneath the switching element for shielding the alignment disorder of the liquid crystal layer from being viewed during transmissive display. Meanwhile, Ogishima only discloses a transflective liquid crystal display comprising an adjusting layer provided at least in the reflective display area R, the adjusting layer making a thickness of the liquid crystal layer 330 thicker in the transmissive display area T than in the reflective display area R, the adjusting layer including a slope in a vicinity of a boundary between the transmissive display area T and the reflective display area R; and a ridge 326' that control the direction in which the liquid crystal molecules of the liquid crystal layer tilt, the ridge being provided in overlap in plan view with both the slope of the adjusting layer and the edge of the reflective layer as shown in Fig. 52, or the ridge being provided such that substantially all of the ridge is within the boundaries, in plan view, of the slope of the adjusting layer as shown in Fig. 49.

Further, as shown in Fig. 1, Ozawa discloses a reflective layer 4 having a portion extending directly below the switching element in the pixel region 3 (Fig. 1A), beneath the slope 60 of the adjusting layer 6, and to an edge of the slope 60 of the adjusting layer 6 that borders the transmissive display area 32, the portion comprising a light shielding film 9 formed on the inner peripheral edge of the reflective layer 4 for shielding the alignment disorder of the liquid crystal layer or prevent malfunction such as light leakage during black display at the boundary region of the reflective display region 31 and the transmissive display region 32 (col. 10, lines 1-19). However, Ozawa does not

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suggest at least one of a slit, opening, and ridge that control the direction in which the liquid crystal molecules of the liquid crystal layer tilt, the at least one of a slit, opening, and ridge being provided in overlap in plan view with both the slope of the adjusting layer and the edge of the reflective layer, or within the boundaries, in plan view, of the slope of the adjusting layer.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms, can be reached at (571) 272-1787.

Thoi V. Duong



03/02/2007